



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 8 New Bond Street, Worcester MA 01606 • 508-792-7650

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August 21, 2017

Robert P. Baldelli
CPI Radant Technologies Division
255 Hudson Road
Stow, MA 01775

RE: Hudson
Transmittal No.: 17-AQ01P-000019-APP
Application No.: CE-17-021
Class: SM-25
FMF No.: 395243
AIR QUALITY PLAN APPROVAL

Dear Mr. Baldelli:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of the spray painting booths at your radom manufacturing facility located at 4 Bonazzoli Avenue in Hudson, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-O, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

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1. DESCRIPTION OF FACILITY AND APPLICATION

CPI Radant Technologies Division (Radant) specializes in the design, manufacture and testing of radomes, radant lens electronically steerable antenna, reflectors and structural composite products for use in high performance airborne, ground based, shipboard and submarine installations. Radant primarily serves the aerospace and defense markets.

This Plan Approval addresses the installation and operation of a paint mix room and three (3) new spray paint booths for the application of military specification technical specifications (MIL-SPEC) paints to radomes constructed of fiberglass resin composites. The painting operation is a three (3) stage process involving the application of coatings in a specific sequence. A polyurethane coating may also be applied. The coating operation will result in volatile organic compounds (VOC), hazardous air pollutants (HAP), particulate matter (PM) and acetone emissions being discharged to the ambient air. Radant is an area source of HAP emissions. The single largest HAP is methyl isobutyl ketone (MIBK). Each spray booth is equipped with a dedicated stack that discharges vertically upward as specified in Table 7. Spray pots and spray guns are cleaned using methyl ethyl ketone (MEK) and acetone. MEK and acetone are also used for cleanup and touch-up operations throughout the Facility.

Best available control technology (BACT) for this operation is the utilization of high volume low pressure (HVLP) guns in each spray paint booth and fully-enclosed spray gun cleaners for the control of VOC and HAP. The monthly and annual usages of coatings are restricted to limit emissions of VOC and HAP. Best management practices (BMP) such as proper personnel training and utilizing tight fitting covers will also restrict VOC and HAP emissions. The installation and maintenance of three or more layers of properly fitting filters in each booth will control PM emissions with an efficiency of 99.47% or greater. Each paint spray booth has a make-up air unit rated at 392,000 Btu. The Facility also has existing natural gas combustion equipment for comfort and hot water heating. The combustion equipment is below the permitting thresholds and is not considered further in this Plan Approval.

This coating operation is subject to 40 CFR 63 HHHHHH (6H) – National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources. Massachusetts has not taken delegation for these standards at area sources of HAP and as such will not be addressed in this Plan Approval.

310 CMR 7.18 (21) Surface Coating of Plastic Parts does not apply to this Facility because it does not have the potential to emit before the application of air pollution control equipment, equal to or greater than 50 tons per year of VOC.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU	Description	Design Capacity of Control Device	Pollution Control Device
1-3	Three Spray Paint Booths	30-32 psi	HVLP guns and three layers of particulate filters in the booth
4	Equipment Cleaning and Touch-up	NA	NA

Table 1 Key:

EU = Emission Unit

HVLP = high volume low pressure guns

NA = not applicable

psi = pounds per square inch

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2				
EU	Operational / Production Limit	Air Contaminant	Emission Limit	
			TPM ¹	TPY ²
1-3	2925 gallons of coating annual usage total for 3 booths	VOC	0.5	6.01
		HAP total	0.26	3.09
		HAP single (MIBK)	0.14	1.64
	244 gallons of coating monthly usage total for 3 booths ³	PM	0.0008	0.01
	75 radomes / month 900 radomes / year	Acetone	0.01	0.06

Table 2

EU	Operational / Production Limit	Air Contaminant	Emission Limit	
			TPM ¹	TPY ²
4	440 gallons per year and 37 gallons per month ⁴	VOC	0.12	1.48
	440 gallons per year and 37 gallons per month ⁴	Acetone	0.12	1.45
Facility- Wide		VOC	0.5	6.01
		HAP	0.26	3.09
		PM	0.0008	0.01
		Acetone	0.13	1.51
		Visible emissions	0%	

Table 2 Key:

EU = Emission Unit

HAP = Hazardous Air Pollutant

lb/hr = pounds per hour

MIBK = methyl isobutyl ketone

PM = Total Particulate Matter

TPM = tons per month

TPY = tons per consecutive 12-month period

VOC = Volatile Organic Compounds

Table 2 Notes:

1. Use the monthly coating and cleaning /touch-up usages to derive the monthly emissions
2. Add the most recent 12 calendar months of emissions to derive tons per consecutive 12-month emissions
3. Add the daily paint usages in gallons for all booths to derive the monthly gallons per month usage
4. Add the daily cleaning and touch up usages in gallons facility wide to derive the monthly gallons per month usages

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3	
EU	Monitoring and Testing Requirements
1-3	1. The Permittee shall implement and utilize a system to track all coating usages on a daily, monthly and 12-month consecutive basis.
	2. The Permittee shall implement and utilize a system to track and calculate emissions on a monthly and 12-month consecutive basis to demonstrate compliance with the emission limits specified in Table 2.
	3. The Permittee shall implement and utilize a system to track the production of radomes on a monthly and 12-month consecutive basis.
	4. The Permittee shall implement and utilize a system to track single (MIBK) and total HAP emissions on a monthly and 12-month consecutive basis to determine compliance with emission limits established in Table 2.
	5. The Permittee shall install a monitoring system and manometer gauge to continuously monitor the pressure across the booth filters and change the filters according to the manufacturers' Standard Operating and Maintenance Procedures (SOMP).
	6. The Permittee shall inspect the booth, gun pressure, filters and manometers daily to ensure proper operation of equipment.
4	7. The Permittee shall track solvent and acetone usages on a daily, monthly and 12-month consecutive basis.
	8. The Permittee shall track and calculate solvent and acetone emissions on a monthly and 12-month consecutive basis to demonstrate compliance with the emission limits specified in Table 2.
Facility-wide	9. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration and the emission limits contained in Table 2, if applicable.
	10. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.

Table 3 Key:

EU = Emission Unit

HAP = hazardous air pollutant

MIBK = methyl isobutyl ketone

VOC = volatile organic compounds

Table 4

EU	Record Keeping Requirements
1-3	<p>1. The Permittee shall record all coatings used on a daily, monthly and 12-month consecutive basis. . Daily records shall be prepared and maintained to demonstrate compliance for each calendar month. Such records shall include, but are not limited to:</p> <p>For each coating, as applied:</p> <ul style="list-style-type: none"> a) Gallons of coating used; b) Coating density (Pounds per gallon); c) Pounds of VOC per gallon of coating; d) Pounds of solids per gallon of coating; e) Pounds of each HAP per gallon of coating; f) Pounds of other non-VOC liquid per gallon of coating; and g) Pounds of VOC per gallon of solids as applied; and h) Maintenance records of filter pad replacement and disposal. <p>2. The Permittee shall record all VOC, HAP single and HAP total emissions on a monthly and 12-month consecutive basis to determine compliance with the emission limits established in Table 2.</p> <p>3. The Permittee shall record the number of radomes produced on a monthly and 12-month consecutive basis.</p> <p>4. The Permittee shall maintain a record of the manometer reading and filter condition at each booth and pressure at each gun that is dated and initialed by the operator at least once per day.</p>
4	<p>5. The Permittee shall record solvent and acetone usages and emissions on a daily, monthly and 12-month consecutive basis to determine compliance with the emission limits established in Table 2.</p>
Facility-wide	<p>6. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.</p> <p>7. The Permittee shall maintain records of monitoring and testing as required by Table 3.</p> <p>8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.</p> <p>9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s). At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.</p>

Table 4	
EU	Record Keeping Requirements
Facility-wide	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration, if applicable.
	11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU = Emission Unit

HAP = hazardous air pollutant

USEPA = United States Environmental Protection Agency

VOC = volatile organic compound

Table 5	
EU	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Central Regional Office of MassDEP, BAW Permit Chief by telephone: 508-767-2845, email: roseanna.stanley@massmail.state.ma.us and CERO.Air@massmail.state.ma.us, or fax : 508-792-7621, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. Pursuant to 7.12(1)(a)7., the Permittee is required to file Source Registration as a condition of this Plan Approval. Pursuant to 7.12(3)(a)2., the Permittee shall report detailed emission estimates for all criteria and hazardous pollutants emitted at the Facility.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP's request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5	
EU	Reporting Requirements
Facility-wide	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5 Key:

EU = Emission Unit

4. SPECIAL TERMS AND CONDITIONS

- A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU	Special Terms and Conditions
1-3	<p>1. The Permittee shall utilize HVLP spray guns and maintain and operate them in accordance with the recommendations of the manufacturer.</p> <p>2. The Permittee shall utilize in each paint spray booth, two or more layers of dry fiber mat filter with a total thickness of at least two inches or an equivalent system that achieves particulate control efficiency of at least 99.47% by weight. Filter material shall be disposed in accordance with all applicable DEP regulations.</p> <p>3. The Permittee shall clean the spray guns in a closed container that:</p> <ul style="list-style-type: none"> a) minimizes solvent evaporation during the cleaning, rinsing, and draining operations; b) recirculates solvent during the cleaning operation so that the solvent is reused; and c) collects spent solvent in a container with a tight-fitting cover so that it is available for proper disposal or recycling.
Facility wide	<p>4. The Permittee shall comply with the following best management practices:</p> <ul style="list-style-type: none"> a) The use of solvent containers that minimize solvent losses; b) The use of solvent containers that avoid excessive transferring or pouring of solvents; and c) At all times, covering the solvent containers, including waste collection containers, except when materials are being added or removed from the container. <p>5. The Permittee shall train applicable new employees on the best management practices for spray painting within 30 days of their employment.</p> <p>6. The Permittee shall not allow nuisance odors or sound caused by the operation of equipment beyond the Facility boundary as determined by MassDEP.</p>

Table 6 Key:

EU = Emission unit

HAP = hazardous air pollutant

HVLP = high volume low pressure

VOC = volatile organic compound

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions Feet	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
1	30	2	21.65	55-85
2	30	2	21.65	55-85
3	30	2	21.65	55-85

Table 7 Key:

EU = Emission Unit

°F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all

removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local laws or regulations now or in the future.
- F. The Application is incorporated into this Plan Approval by reference. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) and a completed Adjudicatory Hearing Fee Transmittal Form, a copy of which is attached hereto, must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Maria L'Annunziata by telephone at 508-767-2748, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Roseanna E. Stanley
Permit Chief
Bureau of Air and Waste

Enclosures:

- Adjudicatory Hearing Fee Transmittal Form

ecc: Hudson Board of Health
Hudson Fire Department
MassDEP/Boston - Yi Tian
Timothy Kucab, Tighe & Bond, Inc., 446 Main Street, Worcester, MA 01608